

**REMARKS**

This is intended as a full and complete response to the Office Action dated December 29, 2005, having a shortened statutory period for response set to expire on March 29, 2006. Please reconsider the claims pending in the application for reasons discussed below.

***Specification***

The disclosure is objected to because of informalities. In response, Applicant has amended the specification as requested by the Examiner. No new matter has been added. Accordingly, Applicant respectfully requests withdrawal of the objection.

***Claim Objections***

Claims 15, 20 and 27 stand objected to because of informalities. In response, Applicant has amended these claims as requested by the Examiner. Accordingly, Applicant respectfully requests withdrawal of the objection.

***Claim Rejections - 35 U.S.C. § 102***

Claims 1, 2, 5-7, 20, 22 and 23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Davis, et al.* (U.S. Patent No. 6,403,949; hereinafter referred to as "*Davis*"). In response, Applicant respectfully traverses the rejection. Further, Applicant has canceled claim 2 without prejudice.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9

USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

*Davis* does not disclose "each and every element as set forth in the claim." Claim 1 recites the limitation of "interrogating at least one optical reference device co-located with the optical sensor." Further, claim 20 includes "at least one optical reference device co-located with the sensor and optically coupled with the light source."

In contrast to this co-location as claimed, a sensor system disclosed in *Davis* has pressure and temperature sensors (reference numbers 108, 110 and 112 in Figures 5 and 6) that are remotely deployed away from a reference fiber Bragg grating (206b), which is disposed at the surface and not in the well bore with the sensors. Only the reference fiber Bragg grating is part of an optical subsystem reference module (206) within an instrument box (101) shown in Figure 5 at the surface. The dashed line surrounding the pressure and temperature sensors in Figure 6 illustratively indicates that these sensors are not located within the instrumentation box but rather in the well bore as shown in Figure 5.

Therefore, *Davis* fails to teach, show or suggest each and every limitation of claim 1 or 20. Applicant submits that claims 1 and 20 and all claims dependent thereon are allowable. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claims 1, 5-7, 20, 22 and 23.

Claims 10, 11, 27 and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Kersey* (U.S. Patent Number 5,227,857). In response, Applicant respectfully traverses the rejection.

*Kersey* does not disclose "each and every element as set forth in the claim." Claim 10 recites the limitation of "interrogating a reference interferometer co-located with the sensor interferometer to generate a reference signal insensitive to the parameter." Additionally, claim 27 includes "at least one reference interferometer co-located with the sensor interferometer and configured to be insensitive to the downhole parameter."

Systems disclosed in *Kersey* however lack this co-location and insensitivity as claimed. In a first system (Figure 1) taught in *Kersey*, there is "a remotely-positioned, unbalanced, fiber optic sensor interferometer" and "a locally-positioned, shielded,

unbalanced, fiber optic reference interferometer." The reference interferometer is locally positioned in close proximity to a detector away from the remotely located sensor interferometer. A second system (Figure 5) disclosed in *Kersey* utilizes first and second sensor interferometers that both sense a change in a measurand field.

Therefore, *Kersey* fails to teach, show or suggest each and every limitation of claim 10 or 27. Applicant submits that claims 10 and 27 and all claims dependent thereon are allowable. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claims 10, 11, 27 and 29.

### ***Claim Rejections - 35 U.S.C. § 103***

The Examiner states with regards to claims 9, 27 and 28 that it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed. Applicant submits that these claims are patentable based at least on the traversal presented above regarding the § 102 rejections. Accordingly, Applicant requests withdrawal of the rejection and allowance of the claims.

### ***Allowable Subject Matter***

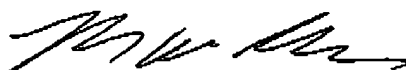
Claims 3, 4, 8, 12-14, 21, 24-26 and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Applicant submits that these claims are allowable based at least on the traversal presented herein regarding the independent claims from which these claims depend. Accordingly, Applicant respectfully requests withdrawal of the objection and allowance of the claims.

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### ***Conclusion***

The references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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